X

SUGGESTIONS

REGARDING THE

DEMARCATION AND MANAGEMENT

OF THE

FORESTS IN KULU.

BY

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CONTENTS.

	PAGE.
Introductory	1
Area demarcated up to date	3
Distribution of forests	4
System to be followed in the future	5
Selection and settlement of 1st Class Reserves	7
Organization and management	11
Deodar standing on assessed lands	13
Price of deodar trees to be charged to the zemindars of Kulu	*ib.*
Establishments	14
Summary of proposals	15
Appendix A.—Draft Forest Rules	17
„ B.—Return of trees granted by Negis	19
„ C.— „ „ „ in each Range	20
„ D.— „ „ „ in the I Class Reserves	21

SUGGESTIONS

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INTRODUCTORY.

THE question of the demarcation and management of the forests in Kulu has been before the Government for many years past, but in the present instance it will not be necessary to go back beyond 1876, in which year Mr. D. Brandis, Inspector General of Forests to the Government of India, Mr. B. H. Baden-Powell, C.S., then Conservator of Forests in the Punjab, and Lieutenant-Colonel W. Stenhouse, Deputy Conservator of Forests in charge of the Beas Division, wrote, after a tour of inspection in Kulu, the well known Joint-Report on the demarcation and management of the forests in Kulu. In that Report, after giving a full and detailed description of the forests, of the rights of Government and of the people in them, and of the objects to be aimed at in forest conservancy in Kulu, the authors proposed that an area of 100,000 acres, equal to 156 square miles, should be demarcated and set aside as 'reserves' under the Rules for the conservancy of Forests and Jungles in the Hill Districts of the Punjab Territories of 1855, which had obtained the force of law under the Punjab Laws Act, 1872. As regards the effects of reservation, the authors proposed that cultivation within the demarcated areas should be prohibited, and that certain parts of the area might be "closed." In these closed blocks the following restrictions were to be enforced :—

(1) Permits for green trees to be granted by the Forest Officer only.

(2) The Forest Officer to be at liberty to prohibit the collection of 'sur' and the grazing of cattle, sheep, or goats.

(3) If a closed block, or part of it, is fenced, all ingress into that area by unauthorised persons for any purpose whatever to be prohibited.

Attention was also drawn to certain abuses of rights, but, with the above exceptions, it was not intended to interfere with the exercise of rights by the people beyond the customary practice prevailing at the time.

2. No orders were issued by the Government of the Punjab on the Joint-Report for some years; and in 1878 the Indian Forest Act was passed and applied to the Kangra District in the Punjab, without, however, cancelling the Rules of 1855. A discussion arose whether, under these circumstances, the demarcation in Kulu should be proceeded with under the old Rules, or whether the new Forest Act should be followed. In their letter No. 404F., dated the 20th October 1879, to the address of the Financial Commissioner, the Government of the Punjab "sanctioned the proposals made in the Joint-"Report regarding the demarcation and management of the forests, directing "the Conservator of Forests to prepare and submit for sanction and publica-"tion the necessary Notifications required as a preliminary to action under "section 4 of the Forest Act."

It is clear, therefore, that at that time the Government of the Punjab had determined to proceed under Chapter II of the Forest Act, 1878, and to constitute the demarcated forests in Kulu '*reserves*' under that Act; in other words it was considered that the proposals of the Joint-Report could best be realised by proceeding in the manner indicated. In accordance with these orders, two Notifications, No. 271F., dated the 8th July 1880, and No. 217F., dated the 25th April 1881, were published in the *Punjab Government Gazette*, notifying 89 blocks of forest, comprising an area of about 220 square miles, under section 4 of Act VII of 1878. At the same time, the Assistant Commissioner of Kulu for the time being was appointed Forest Settlement Officer under Chapter II of the Act; while, by Notification No. 7F., dated the 3rd January 1881, the Commissioner of the Jullundur Division for the time being was appointed to hear appeals from the orders of the Forest Settlement Officer in Kulu.

3. As the demarcation and settlement proceeded, certain difficulties arose as to the manner in which the provisions of Chapter II should be applied. The Forest Settlement Officer referred for the opinion of the Forest Department a sample record of rights of Kothi Barsai, in which he enumerated all the rights of user hitherto enjoyed by the people for the whole Kothi, and without any restriction whatever, except that he authorised the Forest Department to close, with the concurrence of the Assistant Commissioner of Kulu, a certain portion of the forests. To this record the Forest Department raised certain objections, the principal of which were the following :—

(1) The rights should only be exercised for the purpose of satisfying the domestic requirements of the people of Kulu, but not for sale, barter, or export.

(2) The number of cattle permitted to graze in the reserves should be fixed, the whole question being worked out in detail, with the view of apportioning an appropriate grazing ground to each village or to several villages combined. It was added that, "*whenever practicable*," the more important reserves, especially the deodar localities, should be closed permanently against grazing, but that it should, under any circumstances, be stated in the record in which forest the inhabitants of each village might graze their cattle.

(3) The maximum quantity of timber which each village can claim from the reserves annually should be fixed.

There were, in addition, some minor points, which need not be noticed here.

The first point was to some extent admitted, but the second and third points met with strong opposition on the part of the Settlement Officer, the Commissioner, and the Financial Commissioner. It was asserted that to limit the grazing in the reserves, and the supply of timber from these areas, was not necessary or expedient, that it would be exceedingly difficult, and that it would also not be a fair treatment of the rights of the zemindars in the forests. It was, therefore, proposed that the attempt to proceed under Chapter II of the Forest Act should be abandoned, and that only Chapter IV of that Act should be applied to Kulu, at all events, for some years to come.

The Financial Commissioner, in submitting this proposal to Government, added that, in his opinion, Chapter IV would give all the power required to preserve the forests, to prevent the growth of rights, and to carry out the policy of the Joint-Report. The Government of the Punjab thereupon reconsidered the whole question, and in their letter No. 147A., dated the 1st April 1882, adopted the suggestions made by the Financial Commissioner, and issued orders that the forests in Kulu should for the present be treated as protected forests.

4. The Government of India, on noticing this change of policy, referred the subject to Mr. Brandis, at the time on special duty in Madras, as the

chief author of the Joint-Report, who favoured the Government of India with a Memorandum on the points at issue.

In forwarding this Memorandum to the Government of the Punjab, the Government of India drew attention to the importance of the Kulu forests, which provide not only the material required by the local population, but also considerable quantities of timber floated down the Beas River to be used by the people of the plains and for public works, besides their exercising important climatic functions owing to their situation on steep mountain slopes. It was added that Mr. Brandis did not think that the constitution of merely protected forests would realise the objects set forth in the Joint-Report, because, by proceeding under Chapter IV, the growth of private rights cannot be prevented, and the forests cannot be effectually protected against fire. Under these circumstances, it was considered desirable to investigate the subject further, before the Government of the Punjab committed themselves to a fixed policy in regard to these forests. Accordingly, the Officiating Inspector General of Forests was directed to proceed to Kulu and to meet there Colonel Davies, C.S.I., the Commissioner of the Division, with a view to their discussing the subject once more on the spot.

5. I met Colonel Davies at Jibi on the 4th October, and, after a preliminary discussion, I proceeded—accompanied by Mr Anderson, the Forest Settlement Officer, and during part of the time by Colonel Stenhouse, the Divisional Forest Officer—to examine the various localities. After completing my inspection of the forests in the valleys of the Jibi Nal, the Tirth, Sainj, Hurla, and Parbati, I was suddenly ordered back to head-quarters, so that only two days were left to me for the Beas Valley, which I used in riding up one side and down the other side of the valley, with the view of obtaining a general idea of the situation of the forests. It is much to be regretted that urgent work at head-quarters prevented my examining the forests in the main valley in detail. As it is, the remarks which I shall make in the following paragraphs, referring to this part of Kulu, must be based on what is recorded in the various papers at my disposal and the information kindly furnished me by Mr. Anderson. Colonel Stenhouse, being unwell, could unfortunately not accompany me during the latter part of my tour.

Area demarcated up to date.

6. In proceeding to deal with the questions at issue, I shall at once be able to shew that the authorities who have of late taken part in the discussion have, to a considerable extent, started from different assumptions, because the demarcation as actually carried out differs widely from that proposed in the Joint-Report. In paragraph 2 of the latter, it was estimated that the total forest area of Kulu amounted to about 400 square miles and in paragraph 60 it was proposed to demarcate as reserves about 156 square miles, leaving nearly double that area outside the demarcated blocks. It was subsequently stated in official papers that the area covered by the two Notifications under section 4 of the Forest Act amounted to about 220 square miles, or about one-half the total forest area; but as, ordinarily, the area finally gazetted under section 19 would be somewhat smaller than that affected by the preliminary Notifications, it was still considered that the demarcation as carried out had been effected on the lines laid down in the Joint-Report. My first object on arrival in Kulu was to ascertain how far this was correct. Accordingly, all available information was collected, and a rough map of the demarcation prepared. The data are very rough, but they may be assumed to be approximately correct. A computation of the blocks demarcated up to date shews their area to amount to 356 square miles; but the demarcation is not yet complete, and if it is concluded on the lines commenced, at least 34 square miles more will have to be demarcated, chiefly in the valleys of the Hurla and Parbati Rivers and in the vicinity of Platch. In other words, while the Joint-Report contemplated the demarcation of 156 square miles, the actual demarcation comprises about 390 square miles. Excepting some general remarks, that in certain localities

no forest has been left outside the demarcated areas, this great difference has nowhere been explained, and consequently those at a distance were led to base their argument on an assumption which was not in accordance with the facts of the case. It is useless, under these circumstances, to attempt to reconcile the discrepancies amongst the various statements advanced. When it was suggested that the number of cattle permitted to graze in the reserves should, whenever practicable, be fixed, it was believed that two-thirds of the forest area was still outside the reserves, and that the bulk of the cattle would graze in them; but, of course, had it been known that nearly the whole forest area was included in the demarcated blocks, the proposals would have assumed quite a different shape. The same holds good as regards the question of fixing the quantity of timber to be given to each village from the reserves.

7. It has been stated above that the total forest area was estimated in 1876 to amount to about 400 square miles. The information now available seems to shew that it is really somewhat larger, so that, under the demarcation as carried out, some forest is still outside the reserves. This area is, however, very unevenly distributed. While in some parts of the Beas Valley almost every acre of forest has been demarcated, considerable areas are outside in other localities, as, for instance, in the Jibi Valley. In particular near Kothi Barsai, which was selected as an instance by the Forest Settlement Officer, all forest may be said to be inside the demarcation, and the rights of the people of the Kothi must all be provided for in the demarcated area.

As matters stand, it will be necessary to consider *de novo* what measures should be taken, and I shall now proceed to explain my views.

Distribution of forests.

8. The vegetation and distribution of the forests in Kulu have been fully described in the Joint-Report; but it will be useful to recapitulate here a few facts which it is necessary to bear in mind in order to understand what follows.

The most important or characteristic trees in Kulu are 5 conifers and 3 oaks. The conifers are chiefly valuable on account of the timber they yield, while the oaks are lopped for cattle fodder. In starting from an elevation of 12,000 feet (ordinarily the upper limit of tree vegetation) downwards, the above 8 trees are generally met with in the following order :—

(1) *Quercus semecarpifolia*—karshu—the Alpine oak.
(2) *Abies Webbiana*—tos—the Himalayan silver fir.
(3) *Abies Smithiana*—rai—the Himalayan spruce.
(4) *Pinus excelsa*—khail—the blue pine.
(5) *Cedrus Deodara*—kelu—deodar.
(6) *Quercus dilatata*—moru.
(7) *Quercus incana*—ban—the grey oak.
(8) *Pinus longifolia*—chil.

And, again, the trees disappear on descending in the same order, with the exception that the deodar overlaps the moru, while the khail somewhat overlaps the deodar.

The most important tree of all is, of course, deodar. I have noticed it in the Rola Forest at an elevation of 9,800 feet, and in the Parbati Valley at about 4,500 feet. On the whole, it may be said that the range of deodar in Kulu is about 5,000 feet, of which 1,500 feet are above 8,000 and 1,500 feet below 6,000. Between 6,000 and 8,000 feet deodar is at its best, and it is associated here chiefly with blue pine and moru, which are the most useful trees to the people of Kulu, while deodar is almost the only timber exported. Above the deodar localities are the forests of spruce, silver fir, and Alpine oak, while below them are those of chil and ban. It must not, of course, be understood that the different classes of forest are sharply defined; on the contrary, one class changes gradually into the other.

9. It so happens that in most parts of Kulu, except in the immediate vicinity of the rivers, where rice is grown, the region of deodar comprises the greater portion of the gentle slopes; and, as a natural consequence, it follows that cultivators have settled in it in preference to any other elevation, the result being that, broadly speaking, deodar and cultivation go together. And, as a matter of fact, almost every really valuable deodar locality is either honeycombed by cultivation, or, at any rate, the two adjoin each other. Deodar is, no doubt, found away from cultivation; but this is immediately explained by the fact that the slope is too steep or rocky to be fit for cultivation. The Rola Forest, for instance, of which mention is made in the Joint-Report, is situated a long way from cultivation; but on examination it was found to consist of such steep slopes, that probably more than one-half, if not three-fourths, of the trees can never be utilized, because they would be precipitated hundreds of feet and dashed to pieces in their fall.

System to be followed in the future.

10. Deodar is used to a limited extent only by the people of Kulu; for local public works it is required to some extent, but its principal value consists in the price it commands in the plains. In attempting to provide the deodar timber required for export, we are, under the circumstances explained above, sure to meet with exceptional difficulties. The people claim to satisfy their domestic requirements in the matter of forest produce from the forests next to their homesteads; while, on the other hand, it is impossible to reproduce the deodar areas if the people have the free run of them. The question then resolves itself into this:—"Is the export of deodar timber from Kulu so important that the enforcement of certain restrictions on the people of that valley is absolutely necessary?"

11. The only deodar forests of any importance in the Punjab which belong to Government are situated in Hazara and in Kulu. The former are the joint property of Government and the zemindars, and they are, after all, not very extensive. Moreover, they are situated along the border, and no Forest Officer dare approach them except under the protection of a strong police guard. Whether, under these circumstances, it will be possible to increase their productiveness to any considerable extent seems doubtful. There remain then the forests of Kulu. It is true extensive deodar forests are situated in Cashmere, Chamba, and Bashahr. Those of the two last mentioned States have been leased by the British Government, and they are managed by our Forest Officers; but the question has already been raised in Chamba whether the lease should not be cancelled, and it is difficult to say for how long the British Government will be able to maintain a hold on these forests. The Maharajah of Cashmere has, I understand, sold very large numbers of deodar trees of late years, and, if the information at our disposal is even approximately correct, it seems certain that the import from Cashmere must fall off considerably before long.

Under these circumstances, I cannot recommend that the Kulu forests should be managed for local consumption only; on the contrary, we are bound to make the most of the deodar localities, and some moderate interference with the exercise of rights as hitherto practised by the people would appear to be justified in the interests of the consumers at a distance from the forests. At the same time, our measures should be so shaped as to avoid all unnecessary inconvenience to the people of Kulu.

12. The Forest Department commenced operations in Kulu about eighteen years ago, and during a considerable period of that time officers held charge who bore a high character as Forest Officers. Looking, however, at the condition of the deodar forests now, it cannot be said that the result is in any way commensurate with the effort made towards forest conservancy.

The deodar localities are in most instances irregularly stocked; there are numerous blanks, and in many instances the trees present merely a sprinkling over the area. This I can only ascribe to the unsettled state of affairs. As long as the rights admitted in the deodar localities are only defined with regard to their character, but are not fixed either as regards quantity or arranged according to area, it will not be possible to effect any substantial improvement. This, however, can hardly be achieved by declaring the forests protected under Chapter IV of the Indian Forest Act. That chapter does not contemplate any such settlement, and to attempt it nevertheless would certainly go beyond what was intended by the Legislature. Moreover, Chapter IV, as has repeatedly been pointed out, does not prevent the growth of rights or the springing up of new rights. Nor does it enable the Forest Officer to prevent fires, except in the closed portions of the forest. But above all, Chapter IV only permits the closing of any particular block for a period of twenty years, and this is far from sufficient for the reproduction of deodar. This tree grows very slowly in its earlier years, and at 20 years of age it is often not higher than 4 or 5 feet. Besides, it is the exception, and not the rule, to effect reproduction successfully during the first year of closing. As a matter of fact, natural reproduction often does not take effect for years. A good seed-year only occurs about once every three years; and even if it comes, it by no means follows that the result should in every case be a full crop of young seedlings. In short, it will be quite impossible to reproduce a deodar forest in twenty years, and to get the trees up to such a height that they cannot be damaged by cattle. Under these circumstances, I must, as a forester, declare Chapter IV quite unsuited to the requirements of the deodar localities in Kulu.

13. There can hardly be a doubt that the principal deodar localities in Kulu must ultimately become reserved forests; that is to say, with all rights, if any, definitely settled, and the areas safe against the springing up of new rights, as contemplated by the Indian Forest Act. They are really far too important to risk their further destruction by applying Chapter IV of the Act. It is, however, for consideration whether the areas should be brought under the operation of Chapter II of the Act at once, or whether an *ad interim* policy might not be followed.

In the *first* instance, it is contended that the difficulties of applying several of the sections of Chapter II, especially Section 13, are at present almost insurmountable. The difficulties are, no doubt, great; but I believe if the matter is approached resolutely it can be done, provided the original policy of the Joint-Report is followed, and only about one-third of the area, or even less, is reserved, and not four-fifths as now demarcated by the local officers. *Secondly*, Colonel Davies strongly urges that matters are not ripe for a final settlement, and that it will be better to see first how the settlement will work before it is made final. The last contention deserves serious consideration. As a matter of fact, the demarcation is as yet of a very preliminary nature. Boundary pillars have no doubt been erected at most important points along the lower edge of the forest, but it will take some years to put up the necessary intermediate pillars. Moreover, before we can proceed under Chapter II of the Act, we should have to mark off the required areas within the extensive areas so far demarcated. *Lastly*, it is, I understand, possible that the Rai of Waziri Rupi, when he comes of age two years hence, may re-open the question as to the ownership of the soil in that tahsil.

At the same time, it seems highly desirable to give to the deodar localities at once some substantial protection, and under these circumstances it may be the best policy to let the Rules of 1855 remain in force for the present, and to postpone the application of the more complete provisions of the Indian Forest Act for a while. This will enable us to see how the system works before a definite and final settlement is made.

14. I have discussed with Mr. Anderson the question of reducing the areas at present demarcated, but he strongly deprecates any such measure. On the contrary, if the whole of the areas are not intended for reserves as understood by the Forest Act, he would prefer to demarcate a few additional blocks, which he left out because he thought Chapter II would be applied to the whole area. I have no objection to this proposal, and I should suggest that the demarcation be completed by Mr. Anderson on the lines commenced. This would give us a demarcated area of, say, in round numbers, 400 square miles, distributed as follows:—

	Square miles.
In the valley of the Beas River	105
Ditto Parbati River	75
Ditto Hurla „	20
Ditto Sainj „	40
Ditto Tirth „	50
Ditto Jibi „	25
Country about Platch	5
Outer Seoraj	80
Total ...	400

These areas should at once be declared reserves under Sections 1 to 3 of the Rules of 1855, and a general set of subsidiary rules, to regulate all felling and cutting, to prohibit cultivation and the setting of fire to the forests, must be brought into force.

The next step is to select from among these reserves a limited area, which, I presume, will not exceed 80 square miles, and which must ultimately be constituted permanent reserves.

I shall, for the present, call these I Class reserves, and the remainder of the demarcated areas II Class reserves, both under the Rules of 1855. It was, during my short visit to Kulu, impossible for me to decide finally the boundaries of the I Class reserves; but I have, with the assistance of Mr. Anderson and Colonel Stenhouse, made an attempt to indicate their situation and approximate extent on the map of the tahsil. As the detailed investigation proceeds, changes will no doubt be made; but I believe the following remarks will generally hold good.

Selection and settlement of 1st Class Reserves.

15. In selecting the I Class reserves, it should be borne in mind that they must, *whenever practicable*, be free of rights, and their boundaries should be fixed accordingly. Of course, it will not be possible to effect this in every instance, but the attempt should be made to provide the people from the extensive II Class reserves, and if the matter is in any instance really found impracticable, the Forest Settlement Officer must record certain rights to be exercised inside the I Class reserves. Considering the small extent of the areas in these cases, the limit up to which the rights may be exercised must be fixed, and I shall now shortly indicate how the business should, in my opinion, be approached.

In the first instance, there are certain minor rights which may be permitted even throughout the I Class reserves as long as the areas are not closed by the Forest Officer for reproduction. Amongst these are:—

(1). Leaves of the following trees may be taken for fodder: burj, mandar, khanor, maral, jamu, reus, titri, khark, chun, arkhal, ban, moru.

(2). Grass may be cut.

(3). Medicinal roots, &c., but not the bark of trees, may be removed. (They will, however, rarely be found in the I Class reserves, as they are generally obtained from the higher forests.)

(4). Torches may be cut of deodar stumps, provided this can be done without injuring the surrounding seedlings or young trees.

(5). Fruits may be removed, provided no damage is done to the trees.

(6). Nargal (bamboo) may be cut.

(7). Dry wood lying on the ground, with the exception of deodar, may be removed.

Whenever the Forest Officer declares a I Class reserve closed for reproduction, the above privileges can only be exercised with the previous permission of the Forest Officer, who should not be below the rank of a Ranger.

All other rights admitted in the I Class reserves must be dealt with separately in the record.

(8). Grazing. The Forest Settlement Officer maintains that it is impracticable to give the number of cattle in these cases, and it will, therefore, be sufficient to fix the proportion of the area which must always remain open to grazing. In no case should that proportion be more than one-half. I do not think myself that it will, a few special cases excepted, be necessary to record grazing rights in the I Class reserves of the extent now proposed. I may here draw attention to the case of the village of Chini in the Jibi Valley. Just outside the village is the Nagadhar, one of the best deodar localities in Kulu; but nevertheless the people '*offered*' to Mr. Anderson to forego all claims to grazing in Nagadhar, provided a bare patch situated beyond Nagadhar was given to them for grazing, with a right of way through the forest to and from their grazing ground. Surely, if the people of this large village volunteered, the hardship cannot be very great, and there should not be much difficulty in making satisfactory arrangements in other similar cases.

(9). In the case of a right to timber, the number of houses entitled to it should invariably be given, and it should be distinctly stated that only buildings of the nature now customary amongst the people of Kulu are referred to.

Before recording any right of this kind, great care should be taken to ascertain whether the houses cannot be supplied from the II Class reserves. A right to deodar timber should in no case be recorded from the I Class reserves.

As a matter of fact, however, large quantities of timber other than deodar will probably be available from the I Class reserves for the use of the people, as it will in many instances be an advantage to remove such trees. Forest Officers should be instructed to encourage the removal of such trees by the people of the adjoining villages.

It must be distinctly recorded that no timber can be demanded from any part of the I Class reserves which is closed for reproduction.

(10). Rights of way must be indicated in full detail. Rights of way for cattle should be avoided whenever practicable.

(11). Rights for sur or dead pine leaves should, if possible, be avoided. They are most destructive, and as the area of the I Class reserves now proposed is so small, it will only be necessary in exceptional cases to admit such rights in them. In such cases the villages entitled should be enumerated, and the number of days during which sur may be removed must be fixed.

(12). It will not, I think, be necessary to admit rights of lopping trees (except the fodder trees dealt with above); but in many cases the Forest Officer will be able to permit the lopping of trees other than deodar.

(13). As rights in the I Class reserves should only be admitted when the requirements of the people cannot conveniently be satisfied from the II Class reserves, or from undemarcated waste, it is evident that such rights, if admitted, are only to cover domestic requirements, and this must be distinctly recorded. I except, however, such things as medicinal roots, &c.

(14). Generally, I may add that many privileges can be permitted in the I Class reserves at certain times, although they may not have been recorded as rights; but it must rest entirely with the Forest Officer to decide when this can be done without interfering with the objects of conservancy.

16. I now proceed to add a few remarks regarding the areas which should, in my opinion, be set aside as I Class reserves.

I propose the following I Class reserves :—

		Acres.	Total.
	Beas Valley.		
(1)	Manali	1,500	
(2) (3)	Dungri, Sealkalan	60	
(4)	Dana	200	
(5)	Aleobihal	120	
(6)	Dudlu	800	
(7)	Shelin	350	
(8)	Phari	1,000	
(9)	Doangnu	700	
(10)	Kanoi	1,000	
(11)	Deoban	1,200	
(12)	Batahir Behal (includes Som)	100	
(13)	Nagar	250	
(14)	Sesni	200	
(15)	Phetaban	200	
(16)	Ledichalaun	110	
(17)	Devidijhir	150	
(18)	Phatanali	150	
(19)	Gogarshil	150	
(20)	Borsu	550	
(21)	Sandhar	400	
(22)	Chakwin	1,200	
(23)	Reunsighar	600	
(24)	Rajgiri	2,000	
(25)	Kokan	4,000	
			16,990
	Parbati Valley.		
(26)	Kotkandi	800	
(27)	Rajtachi	2,000	
(28)	Bindraban	1,500	
(29)	Rashu	50	
(30)	Gaharwal	100	
(31)	Parbati	12,000	
			16,450
(32)	*Hurla Valley*, estimated		2,000
	Sainj Valley.		
(33)	Kanidhar	150	
(34)	Marhangarh	100	
(35)	Daugi	60	
(36)	Mahlidhar	250	
(37)	Chaliala	420	
(38)	Shangar	600	
			1,580
	Carried forward ...		37,020

		Acres.	Total.
	Brought forward ...		37,020
	Tirth Valley.		
(39)	Rola	2,500	
(40)	Sarchi	850	
(41)	Sairopa	650	
			4,000
	Jibi Valley.		
(42)	Nagadhar	600	
(43)	Blajdhar	1,200	
(44)	Shikari	1,200	
(45)	Serishil	150	
(46)	Lafat	500	
(47)	Deonkaniali (Bah River)	250	
			3,900
(48)	*Outer Seoraj*, estimated		5,080
	Grand Total ...		50,000

or, in round figures, say, 80 square miles, *which is one-fifth of the total area demarcated.* This leaves an area of 320 square miles for II Class reserves. It will be noticed that the area proposed by me as I Class reserves is about one-half of that proposed in the Joint-Report. Should any difficulty be experienced during the progress of the settlement, it may be necessary to reduce the areas still further.

Manali Reserve.—It will probably be necessary to record some rights in this reserve, as it is situated between several villages and the II Class reserves. The upper limit should, therefore, not be higher than is necessary to include the deodar locality. Possibly one-half of the area may always have to be kept open for grazing. There are a number of bare patches now in this reserve, separated by patches of well-stocked forest. The former should at once be closed for reproduction (by fencing them), leaving the patches of well-stocked forest open for grazing. This will enable the cattle to graze through the I Class reserve and thus get up to the II Class reserves.

Dungri, Sealkalan, Dana, Aleobihal, and probably *Dudlu* can be kept free of rights.

Shelin.—There is a village below the reserve, but as the latter is only a narrow strip, and as there is a II Class reserve of considerable extent adjoining it, it should be possible to keep the I Class reserve free of rights.

Phari.—I have not seen this forest, having recommended it as a I Class reserve on the information contained in the Joint-Report. It consists of the basin of the Phari Nal, and, if necessary, the area may be reduced.

Doangnu.—This reserve comprises the lower part of the southern bank of the Doangnu Nal, and as it is situated between two II Class reserves, it can be kept free of all rights.

Kanoi.—The reserve consists of the lower part of the Kanoi Basin, and it is thus situated in two Kothis. It is surrounded on three sides by II Class reserves, and no difficulty should be experienced in keeping it free of rights.

It will be noticed that the forest above Gojra, Kaknaul, Dhamsu, Kirjao, and Soil has been left out, although it is deodar area. I propose this sacrifice in order to keep the remaining area free of rights.

Deoban.—Some rights will have to be recorded in this reserve; but it is for consideration whether the face overhanging Sarsae should not be cut out, so as to get the remainder free of rights.

Batahir Behal.—This includes Som.

Nagar, Sesni, Phetaban, and Ledichalaun.—Villages are situated below and above these reserves. The latter can exercise their rights in the II Class reserves, situated higher up the slope, but for the lower villages rights must be recorded. It may be possible to record all these in two of the above reserves, keeping the other two free of rights.

Devidijhir, Phatanali, and Gogarshil.—It is hoped that they can be kept free of rights.

Borsu.—It will not be necessary, I believe, to record any rights in this reserve.

Sandhar.—Produces fine timber, and efforts should be made to keep it as free of rights as possible.

Chakwin, Reunsighar, Rajgiri, and Kokan.—These four reserves, which I have not seen, have been selected by Mr. Anderson and Colonel Stenhouse; their area may have to be reduced on further enquiry.

Kotkandi.—Can probably be kept free of rights.

Rajtachi and *Bindraban*:—These are two very important reserves, especially the latter, which produces very fine deodar. Unfortunately, it will not be possible to keep them quite free of rights, but those recorded should be reduced to a minimum.

Rashu and Gaharwal.—Can be kept free of rights.

Parbati.—This great reserve consists of the slopes over-hanging the Parbati River on the south side. The upper line should be fixed so as only to include the deodar region, with the view of leaving the sheep grazing in the higher forests outside. The villages of Kasole, Goje, Balarag, Shila, Phulga, and Tulga are situated between the reserve and the river. Balarag and Shila will probably not require any rights in the reserve. In all cases it should be distinctly stated in what part of the reserve the rights which may be recorded may be exercised. An effort should be made to keep the actual deodar areas free of rights.

Reserves on the Sainj.—Kanidhar and Marhangarh will, I fear, be burdened with rights; but the other reserves in this valley can, without difficulty, be kept free of them.

Rola and Sarchi.—These two reserves have been selected because they can easily be kept free of rights. They are only partly deodar localities, but it may be possible to extend the growth of that tree in them.

Sairopa.—Cannot, I fear, be kept free of rights.

Reserves in the Jibi Valley.—Owing to the large areas of II Class reserves and of undemarcated forests in this valley, I trust it will be practicable to keep all the reserves free of rights. If necessary, certain portions may be excluded and put into the II Class reserves. An effort should be made to buy out the small dogris now situated in the middle of the Blajdhar and other reserves.

Organisation and Management.

17. At present the whole management of the forests in Kulu, whether demarcated or undemarcated, devolves upon the forest staff, which consists of—

1 Assistant Conservator,
1 Forest Ranger,
4 Foresters, and
17 Forest Guards.

In addition, the Kothis maintain 68 Rakhas, of whom 40 receive Re. 1 per mensem from the Forest Department.

Kulu seems to have been divided into four Forestership, while the duties of both the Assistant Conservator and the Ranger extend over the whole area. This organisation is faulty in principle.

The requirements of the people in Kulu in the matter of timber vary at present from 20,000 to 40,000 trees per annum. For public works about 600 trees are required, and a certain number of deodar trees are cut annually for export. Until 1879 the Negis of the Kothis were authorized to grant permission to the people to cut certain trees, but in that year this authority was withdrawn, so that now *all* applications have to be submitted to the Forest Officer, who grants the permits. Every tree is supposed to be marked by a Forest official before it is cut. The consequence of this system is that during the last three years nearly the whole time of the

staff has been spent in issuing passes to the people and in marking trees for them, so that real forest work has considerably suffered.

18. It is absolutely necessary to make a radical change at once. It has been shown above that the forest area will, if the present proposals are accepted, stand as follows :—

	Square miles.
I Class reserves, about	80
II Ditto	320
Undemarcated waste, say, ...	100
Total	500

The II Class reserves and the undemarcated waste will be managed principally for the benefit of the people, the chief exception being that the Government cut a limited number of trees for public works and for export. Under these circumstances, it is but right that the people should share the burden involved, and I, therefore, propose the following arrangement :—

(1) The I Class reserves shall be managed exclusively by the Forest Department, who shall have full control over these areas, except in so far as rights may be recorded in them.

(2) The II Class reserves and the undemarcated waste shall be managed through the agency of the Negis (headmen) of the Kothis, who will be responsible for their proper management as may be laid down; while the Forest Department merely controls the action of the Negis. The latter will grant trees to the people in accordance with the rules, and they will be assisted by Rakhas, who are paid by the Kothis. The Kothis will be called upon to keep the demarcation pillars in repair. On the other hand, it will be the duty of the Ranger in each Forest Range to inspect each Kothi periodically, and to see that the rules are attended to. The Ranger will submit an inspection report of each visit to the Assistant Conservator of Forests, who will take such action on it as may be called for.

19. I need not enter here upon the details of the management of the I Class reserves.

The management of the II Class reserves through the agency of the Negis will, I understand, be very much appreciated by the people and by the Negis themselves, and the additional burden imposed upon the Kothis will be merely nominal, as they already entertain Rakhas. On the other hand, the Forest Department will contribute a considerable share towards the expense by paying for the supervision.

20. In Appendix A, I give the substance of the proposed rules for the II Class reserves and the undemarcated waste, and when orders have been passed on the subject of this Report, the rules can be finally drafted. In the meantime, I add the following remarks on this subject.

It will generally be noticed that the rules prohibit certain actions : anything that is not prohibited is permitted.

Rule 3.—Prohibits the breaking up of land for cultivation or other purposes in the II Class reserves. Mr. Anderson is of opinion that this should be done. At the same time the areas are very large, and it may be unobjectionable, or even advisable, in certain cases to grant permission to break up certain areas, especially where large consecutive blocks have been demarcated. Under any circumstances, no permission to break up such land should be given without the previous sanction of the Government, who will no doubt be guided by the reports of both the Civil and Forest Officers.

Applications for the breaking up of undemarcated waste land will be disposed of by the Civil Officer, who will consult the Forest Officer in the case of any deodar, box, walnut, or ash trees standing on the land, and in any other case in which he may consider it necessary to do so.

Rule 4.—This rule has been drafted in accordance with Mr. Anderson's views, who thinks the Forest Officer should be consulted before any waste land is burnt.

Rule 5.—A limit of ten trees has been inserted, beyond which number in each instance a Negi cannot grant trees. This has been done at Mr. Anderson's request. I was willing to increase the number.

Rule 8.—An exception is made in this case in favour of Outer Seoraj at the request of Mr. Anderson. I do not quite understand why this is necessary, now that the Negis can grant trees; or, if it is necessary, why the rule should not be extended to the whole of Kulu.

Rules 9 *and* 10.—These rules refer to the lopping of trees, and the provisions are much more liberal than Mr. Anderson is inclined to grant. He wished in particular to limit the lopping of trees in the undemarcated waste; but this I do not consider necessary, except in the case of deodar, box, walnut, and ash.

Rule 12.—This rule provides for the removal of bark from standing trees, and it has been inserted at Mr. Anderson's request. I do not intend actually to protest against the provision, but it seems to me that the very objectionable practice of barking standing trees might be avoided. Close on 40,000 trees are cut annually for timber, which is at the average rate of about 600 per Kothi, and there should be no difficulty in securing ten and twenty times the quantity of bark required by taking it from the trees felled for timber. It seems wanton waste, under the circumstances, to permit the removal of bark from standing trees, and thus to inflict on them unsightly wounds, which, even if they do not kill the trees, certainly court disease and render the trees ultimately unfit for timber. With a little arrangement and firmness the thing could no doubt be done.

Rule 14.—This rule lays down that, generally, the rights can only be exercised to satisfy the domestic requirements of the people of Kulu; but that, nevertheless, certain articles may be sold under certain conditions and at the pleasure of Government. The rule has been suggested by Mr. Anderson.

Rule 15.—This rule deals with the closing of certain parts of the II Class reserves; it is absolutely necessary if the forests are to be maintained, and I think it has the approval of Mr. Anderson, the Settlement Officer.

Rule 16.—This rule is required as a punishment in case any Negi grants trees recklessly, or otherwise fails in his duty. In such cases the Deputy Commissioner will suspend all interference by the Negi, and transfer his powers to the Forest Ranger for such period as he may think fit.

Deodar standing on assessed lands.

21. It is considered that such trees are the property of the zemindars; but they cannot cut them without permission, nor are they permitted to lop them. I do not propose to interfere at all in this matter, but to leave the Civil Officers to deal with it as they think fit.

Price of deodar trees to be charged to the zemindars of Kulu.

22. The zemindars of Kulu are not entitled to deodar trees, except on payment at such rates as the Government of the Punjab may fix from time to time. Hitherto the price was fixed at Re. 1 per tree. It is, however, obvious that this rate, besides being too low, is too inelastic. There are large numbers of trees crippled by previous coppicing, or for other reasons, which it would be an advantage to remove, but for which the people decline to pay a rupee. And, again, it may be useful to thin certain deodar forests (though I regret to say they are very rare at present), and the people might be willing to buy the trees if obtainable at a moderate charge. On the other hand, to sell a deodar tree, which yields 100 cubic feet of solid timber and more, at one rupee, is quite out of proportion to the value of the tree.

Under these circumstances, I propose to introduce the following graduated scale of *maximum* rates:—

		Rs.
Up to 3 hâts girth	(4′6″)	1 per tree.
„ 4 „ „	(6′)	2 „
„ 5 „ „	(7′6″)	3 „
„ 6 „ „	(9′)	4 „
Above 6 „ „	...	5 „

The trees to be measured 3 hâts from the ground. These will be the maximum rates which can be charged, and it will rest with the Forest Officer to sell trees which are not straight or sound at such lower rates as the people may be willing to give for them. I trust that these rates will be accepted. The expenditure of the Forest Department is considerable, and the only income is derived from the export and local sale of deodar. There is very little mature timber left now, and it will be very difficult to make both ends meet for the next twenty-five or thirty years.

Establishments.

23. If my proposals are accepted, it will be necessary to re-arrange the Forest staff somewhat. The present staff is as follows, irrespective of the Assistant Conservator:—

	Rs.	Per mensem. Rs.
1 Ranger	on 75	75
2 Foresters	„ 25 each	50
2 „	„ 15 „	30
2 Guards	„ 10 „	20
6 „	„ 8 „	48
5 „	„ 6 „	30
3 „	„ 5 „	15
40 Rakhas	„ 1 „	40
1 Munshi	„ 20	20
4 Peons	„ 5 each	20
	Total	348

In order to do justice to the I Class reserves and to control the II Class reserves effectually, it will be necessary to establish three ranges, namely,—

(1) Kulu Proper, or the Beas Valley.
(2) Waziri Rupi.
(3) Seoraj.

Ultimately, we must have a Ranger for each of these three ranges, but for the present the Assistant Conservator will be able to look after the Kulu Range himself; hence only two Rangers are required at the outset.

The Rangers should ultimately be trained men, who have spent part of their course at the Forest School in the Jaunsar Division, so as to become acquainted with the management of hill forests.

Cutting and planting operations should be concentrated as much as possible, and the works should ordinarily be carried on in one locality of each range only. For the immediate supervision of these operations we require 3 Foresters, one for each range; but it must be understood that these men are not to be employed in general supervision in all parts of the range, but that they must be stationed where cutting and planting is going on, for which work they will, under the Ranger's control, be specially responsible. For the present, the Seoraj Forester will be stationed at Jibi, the Waziri Rupi Forester at Bindraban (or, perhaps, Phulga), and the Kulu Forester at Manali. I consider it objectionable to obtain highly educated men for these posts; it will be much better to recruit this class of Foresters from among the deserving Forest Guards

who have learned to read and write, who have otherwise earned promotion by their zeal and good behaviour, and to whom such promotion is really a reward.

The number of Guards required is 20, as follows :—

For the Beas Valley	5
„ Parbati „	4
„ Hurla „	1
„ Sainj „	1
„ Tirth „	1
„ Jibi „	2
For Outer Seoraj	3
For River work.	3
Total ...	20

Ultimately, a few more men may be required. It should be remembered that the Forest Guards will take charge of the I Class reserves only, and that they have no connection whatever with the rest of the forests, which are under the Negis assisted by the Rakhas of the Kothis.

For the Assistant Conservator's Office one Munshi and two peons are required. The Forest Rangers also should have one orderly each. The total establishment will, therefore, stand as follows :—

	Rs.		Per mensem. Rs.
1 Ranger	on	75	75
1 „	„	50	50
1 Forester	„	20	20
2 „	„	15 each	30
4 Watchers	„	10 „	40
8 „	„	8 „	64
8 „	„	6 „	48
1 Munshi	„	25	25
4 Peons	„	6 each	24
		Total ...	376

which represents an increase of Rs. 28 per mensem over the sanctioned scale.

24. Hitherto the head-quarters of the officer in charge of the Kulu Forests have been at Manali, where some special planting operations have been carried on. At the same time, Manali is quite at one end of Kulu, and, as I understand that a new house has to be built for the officer in charge, I am strongly of opinion that his head-quarters should be moved to Naggar, where the Assistant Commissioner of Kulu resides. It is desirable on all accounts that the two officers should live at the same place.

Summary of Proposals.

25. My proposals may be recapitulated as follows :—

(1). Completion of the demarcation as commenced, whereby an area of about 400 square miles will be marked off.

(2). Constitution of the demarcated area into I and II Class reserves under the Rules of 1855, the areas being approximately—

	Square miles.
I Class reserves	80
II Ditto	320
Total ...	400

(3). The rights of the people to be provided for in the II Class reserves and in the undemarcated waste, whenever this is practicable. In any case in which this is not possible, it should be specifically stated what rights certain villages may exercise in certain I Class reserves; in particular the right of

grazing being limited by the proportion of the area to be kept open for grazing, and the right to timber being fixed by the number of houses entitled to it from a certain I Class reserve.

(4). The I Class reserves to be managed exclusively by the Forest staff; and the II Class reserves and the undemarcated waste through the agency of the Negis assisted by village Rakhas, but under the control of the Forest Department.

(5). Ultimately, the I Class reserves to be finally settled as State reserves under Chapter II of the Indian Forest Act, and the II Class reserves to be dealt with in such manner as the Government may decide.

(6). Deodar trees standing on assessed lands to be dealt with by the Civil Officers as they think fit.

(7). The price of deodar trees to be revised, as explained in paragraph 22.

(8). The Forest establishment to be revised, as set forth in paragraph 23.

(9). The head-quarters of the Assistant Conservator to be established at the same place as those of the Assistant Commissioner of Kulu.

APPENDIX A.

Subsidiary Rules, framed under the "Rules for the Conservancy of Forests and Jungles in the Hill Districts of the Punjab Territories, 1855," for the management of the II Class reserves and of waste lands in Kulu, in the Kangra District.

1. These rules apply to all II Class reserves and waste lands, the property of Government, in Kulu, Waziri Rupi, and Sebraj.

2. The Government may at any time transfer any portion of the II Class reserves to the I Class reserves, and thereby remove such areas from the operation of these rules.

3. The breaking up of land for cultivation or for any other purpose in the II Class reserves is prohibited. Any person who desires to break up waste land outside the demarcated forests, shall first obtain the sanction of the Civil Officer. The necessary application shall be made through the Negi of the Kothi.

4. The setting fire to any II Class reserve is prohibited.

The Forest Officer shall prepare and communicate to the Negis lists of all undemarcated waste lands which may be burnt regularly. No other areas may be burnt without the previous sanction of the Forest Officer, the necessary application being submitted through the Negi.

5. The trees in the Kulu forests are classified as follows :—

I Class trees.

(1) Deodar, (2) Box, (3) Walnut, (4) Ash.

II Class trees.

(5) Kosh, (6) Darl, (7) Kakran, (8) Kirk, (9) Rakhal, (10) Kahu, (11) Chestnut, (12) Sissu, (13) Elm, (14) Mulberry, (15) Cypress, (16) Kail, (17) Chil, (18) Rai, and (19) Tos.

III Class trees.

All others.

The cutting or removal of any I and II Class trees is prohibited, without previous permission. All applications for such trees shall be made to the Negi of the village, who may grant up to ten trees of any of the II Class trees at a time. The Negi will send all applications for a larger number of trees, as well as those for I Class trees, to the Forest Ranger, who will pass such orders as the case may require.

6. The Negi will submit on the 1st of each month a return in Form B to the Forest Ranger, shewing the kind and number of trees granted during the past month.

7. Two rai or tos trees for each funeral, and, in default of dry wood, green kail, chil, rai, or tos sufficient for burning the dead, may be cut without previous permission: provided notice is at once given to the Rakha in charge of the forest, who shall report the matter to the Negi.

8. In Outer Seoraj, kail or rai poles, suitable in size and shape for the sanj of the plough, may be cut without previous permission.

9. The lopping of the following trees, not standing on cultivated lands, is prohibited: deodar, walnut, box, and ash.

10. The lopping of the following trees in the II Class reserves for more than one-half their height is prohibited: kail, chil, rai, tos.

11. It is prohibited to strip the bark of deodar, walnut, box, or ash, or to injure or mutilate these trees in any other way.

12. It is prohibited to strip the bark of kail, chil, rai, or tos trees, unless these trees are 3 hâts in girth, measured 3 hâts from the ground, or to strip more than one-third of the girth.

13. No forest produce or rights to grazing obtained without payment may be alienated, except with the land to which the rights appertain: provided that right-holders may, nevertheless, at the pleasure of Government, sell fire-wood, torches, charcoal, and grass at the encamping grounds and towns within the limits of Kulu, and in the town of Rampur; provided also that they may sell bamboos and medicinal roots beyond the limits of Kulu.

14. If any part of the II Class reserves requires rest, to prevent its being overcut, for reproduction, or for any other reason, that part may be closed against the exercise of all or any rights, provided that the part so closed shall not be more than one-third of the area of the II Class reserves in any Kothi.

The procedure shall be as follows :—If the Forest Officer considers closing necessary, he shall obtain an expression of the Assistant Commissioner's views, and then submit the correspondence to the Officer in charge of the Beas Division. The latter will obtain the sanction of the Deputy Commissioner of the District to close the block for such period as he may consider necessary. If the Deputy Commissioner gives the necessary sanction, he shall instruct the Assistant Commissioner, Kulu, to close the block, and that block shall be closed by him accordingly. If the Deputy Commissioner declines to sanction the closing of the block, either altogether or for the period applied for, he shall forward the correspondence to the Commissioner of the Division, who will either uphold the Deputy Commissioner's decision or reverse it. In the former case, he shall forward the correspondence to the Conservator of Forests in the Punjab, who, if he sees fit to do so, may appeal to the Government of the Punjab against the decision of the Commissioner.

15. Timber or other forest produce required for public works in Kulu may be obtained from the II Class reserves, or from undemarcated waste lands the property of Government, on an order of the Assistant Commissioner, to be given to the Negi of the Kothi : provided a copy of the order issued is at the same time forwarded to the Assistant Conservator of Forests, who will communicate it to the Forest Ranger.

16. The Deputy Commissioner of the District may at any time suspend any Negi from the functions exercised by him under these rules, and transfer, for such time as he may see fit, the power ordinarily enjoyed by such Negi to the Forest Ranger. The procedure in bringing this rule into operation will be similar to that laid down in Rule 14.

17. Nothing in these rules shall be deemed to prohibit any act done by permission in writing of the Forest Officer duly authorised to grant such permission.

APPENDIX B.

Statement shewing the number of trees granted in *Kothi,* • *Tahsil, during the month of* 188 .

Serial No.	Name of Phati.	Name of village.	Number of houses in village.	Trees granted.						Remarks.
				Kail.	Chil.	Rai.	Tos.	Other trees.	Total.	
1	2	3	4	5	6	7	8	9	10	11
			Total ...							

Note.—This return will be submitted by the Negi to the Forest Ranger. The grants to each village will be shown in one line, and it will be advisable to print the form in the vernacular, filling in columns 1, 2, 3, and 4 in print.

(Signed) •

Negi, *Kothi.*

APPENDIX C.

Statement shewing the number of trees granted from II Class Reserves and waste lands in the *Range during the month of* 188 .

Serial No.	Name of Kothi.	Number of houses.	TREES GRANTED.						Remarks.
			Kail.	Chil.	Rai.	Tos.	Other trees.	Total.	
		Total ...							

Note.—This return will be submitted by the Forest Ranger to the Assistant Conservator. Columns 1, 2, and 3 should be filled in in print, each Kothi being shewn in one line. The return includes all trees granted free, whether by the Negi or by the Forest Ranger.

(Signed)

Forest Ranger.

APPENDIX D.

Statement shewing the number of trees granted from I Class Reserves during the month of 188 .

Serial No.	Name of Forest.	Grantee's				Trees granted.						Remarks.
		Name.	Khoti.	Phati.	Village.	Kail.	Chil.	Rai.	Tos.	Other trees.	Total.	
					Total ...							

Note.—This return shews the number of trees granted from I Class Reserves to right-holders, recorded in the Forest Settlement Record.

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